

DOE 450.1 ENVIRONMENTAL PROTECTION PROGRAM WORKSHOP

BIOTA PROTECTION

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ENVIRONMENTAL INTERACTIONS

- Identify site activities and how they can interact with biota (plants and animals). Some examples:
- Activities, Products, Services:
 - Hazardous & Radioactive Waste Gen. & Mgmt.
 - Facility Construction & Operations
 - D&D and management of lands and structures
- Environmental Aspects:
 - Contaminated site disturbance
 - Interaction with biota and their habitat
 - Air & water discharges / water & soil contamination

ENVIRONMENTAL IMPACTS

- Identify impacts (and their significance) to biota
- Evaluation methods selected should consider:
 - Hazards (e.g., physical, chemical, radiological); routes of exposure to and effects on biota
- Must evaluate impacts to biota from effects of radiation (methods provided in DOE technical standard DOE-STD-1153-2002)
- Impacts relative to biota protection:
 - Harm or reduction in biota populations; habitat loss
 - Non-compliance with permits, limits, standards
 - Stakeholder interest and concern
 - Loss of credibility; cost and schedule impacts

APPLICABLE REGULATORY REQUIREMENTS

- Describe how laws, regulations and directives relative to biota protection are considered
- Maintain records of applicable requirements, permits, and demonstrations of compliance
- Identify POCs for these functions; coordination, integration, and linkages across site activities/aspects

OTHER REQUIREMENTS

- Radiation protection of biota requirements:
 - DOE Order 450.1
 - DOE Order 5400.5
 - DOE Technical Standard DOE-STD-1153-2002
- Coordination within and across sites through DOE's Biota Dose Assessment Committee

OTHER REQUIREMENTS

- O 450.1 requires biota protection, AND environmental monitoring such that its design & resultant data is sufficient to evaluate potential impacts to biota
- Encourage a systems approach:
 - Site-wide, cross-media view to biota protection
 - Helps to identify: (a) individual and collective impacts; (b) efficiencies in biota monitoring program design and demonstrations of compliance; (c) overlaps and gaps
- Integration of NEPA activities

ENVIRONMENTAL OBJECTIVES AND TARGETS

- Environmental Aspects:
 - Air and water discharges; surface & ground water, soil contamination; interaction with biota and their habitat
- Objective:
 - Demonstrate to DOE, local regulators, and stakeholders that radioactive discharges and residual radioactive contamination on site lands is not impacting biota.
- Targets:
 - Conduct biota dose evaluations for 50% of site operable units and facilities in the next year; document in ASER
 - Determine if any additional monitoring is needed
 - Promote awareness of biota protection activities

CHECKING AND CORRECTIVE ACTION

- Relative to protection of biota, an internal EMS self-assessment might look for:
 - Evidence that potential impacts to biota have been evaluated through a systems approach considering all relevant site activities/aspects
 - Procedures for evaluating radiation doses to biota and needed monitoring are in place
 - Procedures for addressing non-compliance with permits/standards/limits for biota protection are in place
 - Going beyond reactive compliance; fostering continuous improvement

RESOURCES

- DOE Biota Dose Assessment Committee (BDAC)
 - A DOE-wide committee chaired by EH-412
 - <http://homer.ornl.gov/oepa/public/bdac>
- A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota (DOE-STD-1153-2002)
 - Provides screening and analysis methods, detailed guidance, and software (RAD-BCG Calculator)
- RESRAD-BIOTA code
 - Being developed through a DOE, EPA, and NRC partnership